

# Managing E-Waste in Missouri

E-Waste Stakeholder Meeting  
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Missouri  
Department of  
Natural Resources

# Managing E-Waste in Missouri

- ◆ Definitions
- ◆ Background
- ◆ Regulatory Framework
- ◆ Issues

# Definitions

For purpose of today's discussion

- ◆ **E-Waste** – anything with a printed circuit board and its associated peripherals
  - ◆ Includes:
    - ◆ TVs, computer monitors, cell phones, computers and peripherals (printers, copiers, scanners, remotes, etc.).
  - ◆ Does not include:
    - ◆ Medical equipment, stereos, radios, VCR & DVD players, microwaves, smoke alarms, white goods or automobiles.

# Definitions

## Management Methods

- ◆ **Reuse** – refurbish/repair/donate/resell products as a working unit.
- ◆ **Demanufacture** – dismantling into components that can be reused or sold as a commodity
- ◆ **Disposition** – includes both recycling and disposal.

# Definitions

## Management Methods

- ◆ **Recycling** – recovery and reprocessing of materials to create a new useable product.
- ◆ **Disposal** – permanent storage
  - ◆ Legal; such as a RCRA Subtitle D landfill for non-regulated entities or RCRA Subtitle C facility for regulated entities.
  - ◆ Illegal disposal; such as a ditch, field or Subtitle D landfill for regulated entities.

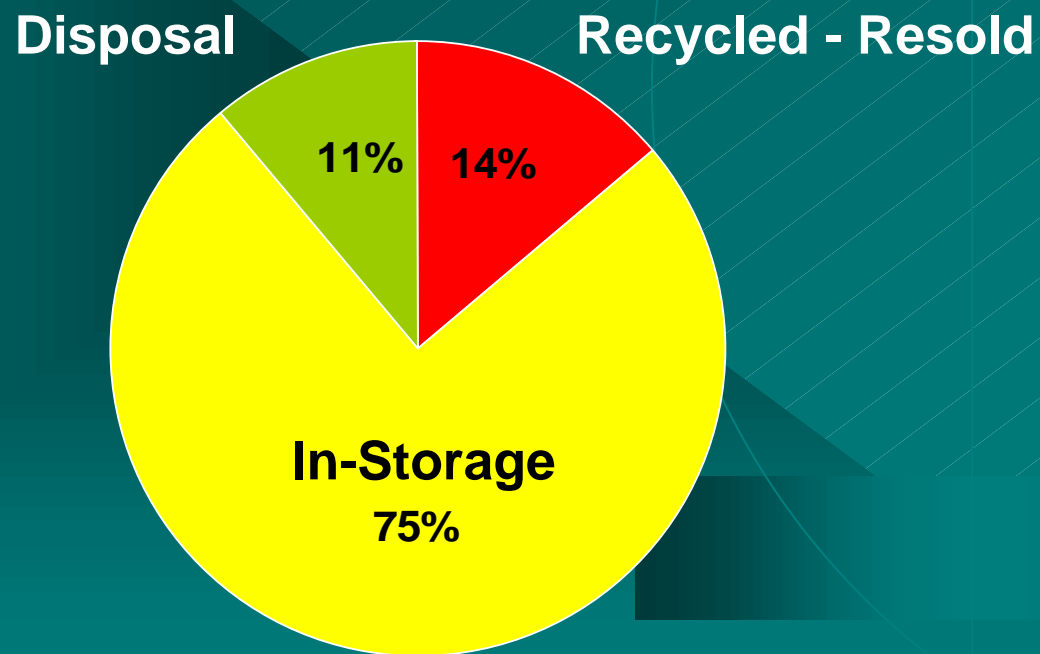
# Definitions

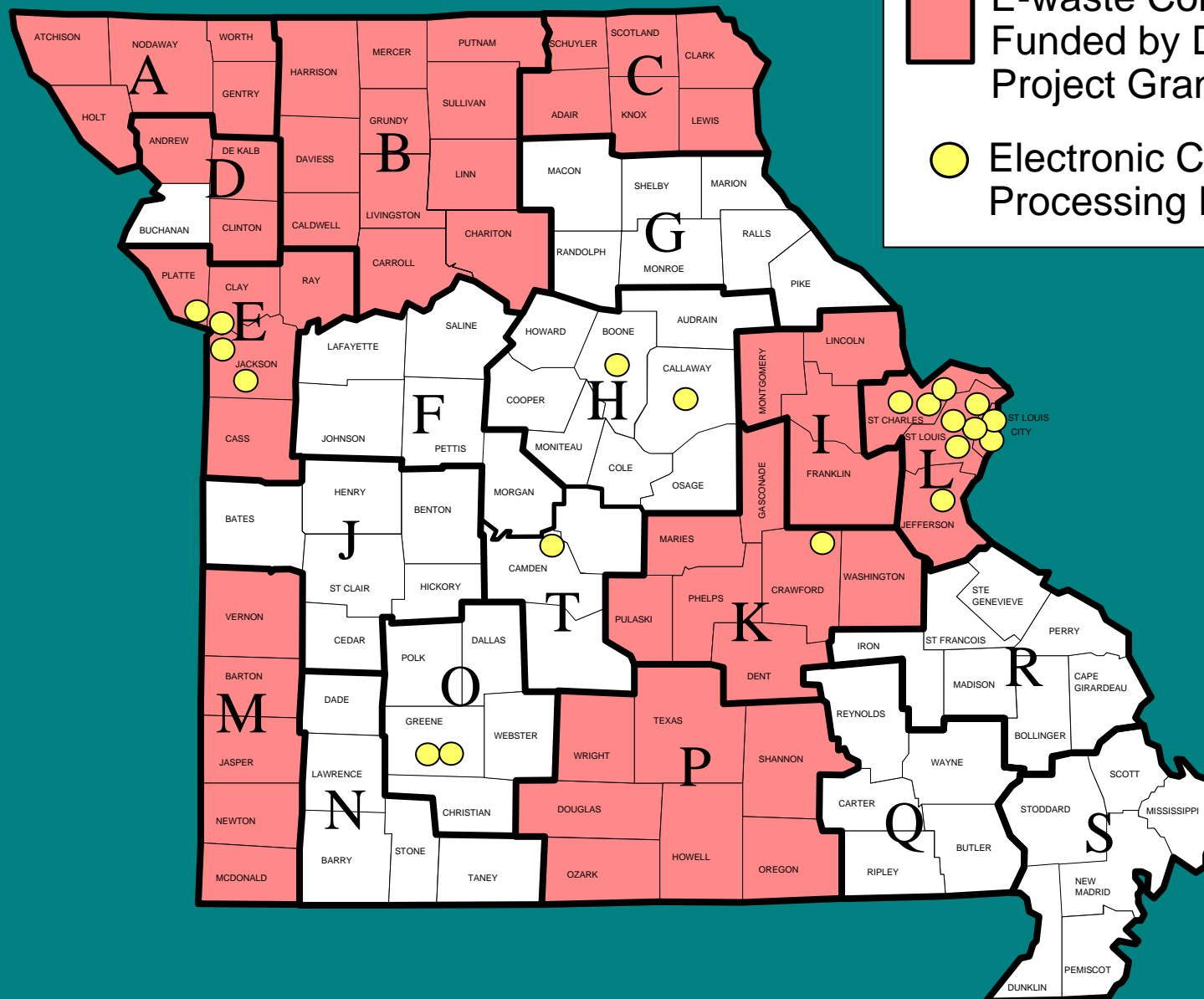
## Types of E-Waste “Handlers”

- ◆ **Collectors** - collect E-Waste for the purpose of reuse, recycling or disposal.
- ◆ **Processors** - refurbish, resell, demanufacturer, recycle or dispose E-Waste.
- ◆ **Transporters** - move E-Waste from one point to another.
- ◆ **Brokers** - facilitate movement of E-Waste from one entity to another typically for a fee.

# Background

Approximately 2.25 Million obsolete computers and televisions are generated each year in Missouri.







# Background

- ◆ Missouri DNR SWMP participated in the National Electronics Product Stewardship Initiative (NEPSI) process.
- ◆ SWMP Waste Reduction and Recycling Project Grant funded report: “Expanding and Developing Markets for Used and End-of-Life Electronics” 2002
- ◆ SWMP Target Grants have funded E-Waste collections and facilities.

# Background

- ◆ Solid Management District Grants have funded E-Waste collections and facilities.
- ◆ Business sponsored programs – Dell, Best Buy, Staples, Hewlett-Packard etc.
- ◆ Missouri Cities & Counties have coordinated collections and created partnerships
- ◆ E-Waste is managed in Missouri with a “patchwork” of Federal Regulations, State Laws and Regulations.

# Regulatory Framework

## Definitions

- ◆ **40 CFR 261.2 Hazardous Waste** is a “solid waste” which because of its quantity, concentration, physical, chemical, or infectious characteristics may:
  - ◆ Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored or disposed, or otherwise mismanaged; or
  - ◆ Cause or contribute to an increase in mortality, or an increase in irreversible or incapacitating illness.

# Regulatory Framework

- ◆ Hazardous Characteristics

- ◆ Ignitable
- ◆ Corrosive
- ◆ Reactive
- ◆ Toxic

# Regulatory Framework

- ◆ Listed Hazardous Waste
  - ◆ Source-Specific Wastes
  - ◆ Nonspecific Source Wastes
  - ◆ Commercial Chemical Products

# Regulatory Framework

- ◆ Hazardous Waste Determination of E-Waste
  - ◆ Based on report “RCRA Toxic Characterization of Computer CPUs and other Discarded Electronic Devices”

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# Regulatory Framework

## ◆ Hazardous Waste Determination of E-Waste

- ◆ Cathode Ray Tubes (CRT)
  - ◆ Color TVs & Computer Monitors
- ◆ Flat Panel Monitors
- ◆ Central Processing Units (CPU)
- ◆ Laptop Computers
- ◆ Cellular Phones
- ◆ Computer Peripherals
  - ◆ Key boards, computer mice, remote controls, printers
- ◆ \* VCRs, smoke detectors

# Regulatory Framework

## Household Hazardous Waste Exemption

### ◆ 40 CFR 261.4(b)(1)

The following solid wastes are not hazardous wastes:

Household waste, including household waste that has been collected, transported, stored, treated, disposed, recovered (e.g., refuse-derived fuel) or reused. “Household waste” means any material (including garbage, trash and sanitary wastes in septic tanks) derived from households (including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds and day-use recreation areas).



# Regulatory Framework

## Federal Regulations

- ◆ **40 CFR 261.1 (c) (8) Speculative Accumulation:**  
At least 75% of the materials on hand January 1 are recycled or transferred to another site to be recycled by December 31.
- ◆ **40 CFR 261.2(e) Legitimate Recyclers:**  
Materials are not solid waste when recycled.
- ◆ **40 CFR 261.4(a)(14) and 40 CFR 261.6(a)(3)(ii) Printed circuit boards.**
- ◆ **Federal Register Jan. 4, 1985 Sham recycling**

# Regulatory Framework

## Missouri Regulations

- ◆ **10 CSR 25-4.261** Incorporates 40 CFR 261.1(c)(8) and 40 CFR 261.2(e) Speculative accumulation and demonstration of legitimate recycling
- ◆ **10 CSR 25-4.261(2)(A)1.** Material that is stored or accumulated in surface impoundments or waste piles

# Regulatory Framework

## Missouri Statutes

- ◆ 260.432.5(2) RSMo

After January 1, 1994, small quantities of hazardous waste which are exempt from regulation under the provisions of sections 260.350 to 260.434, except *de minimus* amounts, shall not be placed in a sanitary landfill.

# Regulatory Framework

## Missouri Statutes

- ◆ 260.380.2(1) RSMo

Householders, farmers and exempted persons shall manage all hazardous wastes they may generate in a manner so as not to adversely affect the health of humans, or pose a threat to the environment, or create a public nuisance.

# Issues Associated with Managing E-Waste

- ◆ Safety in Handling
- ◆ Conserving Resources
- ◆ Using Landfill Space
- ◆ Costs/Economics
- ◆ Speculative Accumulation
- ◆ Illegal Disposal
- ◆ Bad Practices, e.g. Exporting Harm
- ◆ Disparity in Services